What is claimed is:

[Claim 1] 1. A Schottky barrier diode, comprising:

an active area;

at least one separation region bounding the active area; and

an electrode formed in the active area to form a Schottky junction, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction.

[Claim 2] 2. The Schottky barrier diode according to claim 1, wherein the electrode comprises a silicide.

[Claim 3] 3. The Schottky barrier diode according to claim 1, wherein the at least one separation region is a dielectric material selected from a group consisting of an oxide, a polymer, a glass, and a nitride.

[Claim 4] 4. The Schottky barrier diode according to claim 1, wherein a portion of a guard ring is removed from about the active area.

[Claim 5] 5. The Schottky barrier diode according to claim 1, wherein the at least one separation region bounds the active area in one dimension.

[Claim 6] 6. The Schottky barrier diode according to claim 1, wherein the at least one separation region comprises a plurality of separation regions, and where the plurality of separation regions bound the active area in two dimensions.

[Claim 7] 7. The Schottky barrier diode according to claim 1, wherein the separation region fully surrounds the active region, thereby eliminating a guard ring.

[Claim 8] 8. The Schottky barrier diode according to claim 1, wherein the Schottky junction has edges spaced away from the separation region bounding the active area.

[Claim 9] 9. A Schottky barrier diode, comprising:

a semiconductor substrate;

at least one separation region bounding an active area formed on the semiconductor substrate;

a portion of a guard ring on the substrate; and

an electrode formed on a surface of the semiconductor substrate in the active area to form a Schottky junction, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction, and the separation region is substantially formed in the active region to eliminate other portions of the guard ring at the portion where the at least one separation region is located.

[Claim 10] 10. The Schottky barrier diode according to claim 9, wherein the at least one separation region is a dielectric material selected from a group consisting of an oxide, a polymer, a glass, and a nitride.

[Claim 11] 11. The Schottky barrier diode according to claim 9, wherein the at least one separation region bounds the active area of the Schottky junction in one dimension.

[Claim 12] 12. The Schottky barrier diode according to claim 9, wherein the at least one separation region comprises a plurality of separation regions, and the plurality of separation regions bound the active area of the Schottky junction in two dimensions.

[Claim 13] 13. The Schottky barrier diode according to claim 9, wherein the Schottky junction has edges spaced away from the separation region bounding the active area.

[Claim 14] 14. A process for forming a Schottky barrier diode, comprising the steps of:

forming an active area in a substrate;

forming an electrode on the substrate in the active area to form a Schottky junction; and

forming at least one separation region on the substrate where the at least one separation region is bounded on one side by the active area, wherein the at

least one separation region reduces parasitic capacitance about the Schottky junction.

[Claim 15] 15. The method according to claim 14, wherein the electrode is formed with a silicide.

[Claim 16] 16. The method according to claim 14, wherein the at least one separation region is formed with a dielectric material selected from a group consisting of an oxide, a polymer, a glass, and a nitride.

[Claim 17] 17. The method according to claim 14, wherein the at least one separation region is formed to bound the active area of the Schottky junction in one dimension.

[Claim 18] 18. The method according to claim 14, wherein forming the at least one separation region comprises forming a plurality of separation regions and the plurality of separation regions bound the active area of the Schottky junction in two dimensions.

[Claim 19] 19. The method according to claim 14, wherein the separation region fully surrounds the active region, thereby eliminating a guard ring.

[Claim 20] 20. The method according to claim 14, wherein the Schottky junction is formed to have edges spaced away the separation region bounding the active area.